UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,473	10/27/2006	Ralf Keller	P18906-US1	1188

27045 7590 08/05/2008

ERICSSON INC.
6300 LEGACY DRIVE
M/S EVR 1-C-11
PLANO, TX 75024

EXAMINER	
TURNER, ASHLEY D	

ART UNIT	PAPER NUMBER
2154	

MAIL DATE	DELIVERY MODE
08/05/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/595,473	Applicant(s) KELLER ET AL.	
	Examiner ASHLEY D. TURNER	Art Unit 2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _27 October 2006_.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-16_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _10/27/2006_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7 and 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Champagne (US 7,310,730 B1) in view of Voit (US 6,798,751 B1).

Regarding claim 1

Referring to claim 1 Champagne discloses a method in an intermediate node comprising a multicast/broadcast server and a streaming node for providing multicast for streaming transmission from a streaming server to users of a multicast group with the multicast/broadcast server providing multicast transmission and with the streaming node providing a streaming transmission based on an on-demand single –user signaling supporting the transmission of a streaming flow, the method comprising the steps of (Abstract: A method of communicating an encrypted data broadcast to a plurality of virtual private network receivers is disclosed. A first communication channel is established between a first one of the receivers and a network node. A private data stream is communicated to the first receiver on the first channel. A request is received from the first receiver to join a broadcast data stream that is directed to a plurality of receivers by a broadcast server. A second encrypted communication channel is established

between the first receiver and the network node for purposes of carrying the broadcast data stream. Decryption information, which the first receiver can use to decrypt information that is sent on the second channel, is sent to the first receiver through the first channel. The broadcast data stream is then communicated to the first receiver on the second channel. As a result, a particular receiver can receive an encrypted broadcast that is encrypted as part of a single session for a large plurality of other receivers, without impacting separate, private encrypted communications conducted by the particular receiver.) (Col. 6 lines 8-18 In block 306, a request from the first receiver to join a broadcast is received. The request may be an HTTP or RTSP request. For example, network node 202 receives a request from VPN client 214B to join a broadcast data stream originating at broadcast server 102. VPN client 214B may provide the request to the network node 202 by relaying a selection of a link or UR-L associated with broadcast server 102 that is made by an end user at personal computer 116B. In this context, a "broadcast" or "broadcast event" refers to an event that ideally is multicasted, such as live streaming audio, video streaming, etc.) and (Fig. 2): establishing a bearer for a multicast transmission according to the requirements for streaming transmission (Col. 7 lines 11-22 In one particular approach, the broadcast event is unicast to each receiver using IPSec for encryption on the broadcast channel. Alternatively, the broadcasted event can be transmitted using generic routing encapsulation (GRE). In this approach, the broadcast server 102 communicates the broadcast using multicast to all elements of LAN 104 or network 108 that support multicast, and uses unicast GRE tunnels for communication to clients through elements that do not support multicast. In this approach, for efficiency, the network element that originates the unicast streams could cache the broadcast stream.), establishing a multi-user streaming

session on the bearer by translating the on – demand (e.g. Video –On-Demand) single –user signaling received from the streaming server into multi-user push signaling (Col. 7 lines 33-36 In this environment, the ISP could store the broadcast event as a confidential file in a cache local to a particular set of users. Such users then could retrieve, as Video-On-Demand, the broadcast event stored in the cache, which would be sent by unicast to the users.). Champagne did not discloses adapting the received streaming flow to the multicast transmission according to the needs of a multicast group or subgroup of a multicast group, replicating the received streaming transmission according to the number of the multicast subgroups. The general concept of adapting the received streaming flow to the multicast transmission according to the needs of a multicast group or subgroup of a multicast group, replicating the received streaming transmission according to the number of the multicast subgroups is well known in the art as taught by Voit. Voit discloses adapting the received streaming flow to the multicast transmission according to the needs of a multicast group or subgroup of a multicast group, replicating the received streaming transmission according to the number of the multicast subgroups. (Col. 25 lines 45 -56 and Col 26 lines 1-6 For a multicast service, such as the satellite-originated video broadcast service, the service provider sends one stream through the vertical services domain network 13 to the L3/4 ATM switch 19. The switch 19 will monitor every ATM virtual circuit going to the subscribers, looking for IGNP requests. A subscriber sends an IGNP request to join a selected multicast channel. When the L3/4 ATM switch 19 detects such a request, it identifies the requested channel and the requesting subscriber equipment and <u>forwards</u> a `join` message to the vertical services domain. Subsequently, the switch 19 <u>replicates</u> received packets for the requested broadcast channel, and the switch drops the <u>replicated packets</u> into the cells for each of

the virtual circuits of all of the joined subscribers, including the newly added subscriber. When the subscriber later elects to end viewing of the multicast, the subscriber's equipment sends a `leave` message, and the switch 19 stops adding the cells for the multicast to that subscriber's virtual circuit). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Champagne to include adapting the received streaming flow to the multicast transmission according to the needs of a multicast group or subgroup of a multicast group, replicating the received streaming transmission according to the number of the multicast subgroups in order to provide any bandwidth or delay guarantees

Regarding claims 15 and 16

Claims 15 and 16 are similarly rejected using at least the same reasoning /citations provided for claim 1 since they recite the same limitations and are distinguished only by statutory category.

Regarding claim 2

Referring to claim 2 Champagne and Voit discloses all the limitations of claim 2 which is described above. Champagne also discloses further comprising the step of the streaming node communicating with the server adapts the streaming transmission and forwards the adapted streaming transmission to the multicast/ broadcast server (Col. 7 lines 11-22 In one particular approach, the broadcast event is unicast to each receiver using IPSec for encryption on the broadcast channel. Alternatively, the broadcasted event can be transmitted using generic routing

encapsulation (GRE). In this approach, the broadcast server 102 communicates the broadcast using multicast to all elements of LAN 104 or network 108 that support multicast, and uses unicast GRE tunnels for communication to clients through elements that do not support multicast. In this approach, for efficiency, the network element that originates the unicast streams could cache the broadcast stream). Champagne did not discloses which replicates the received streaming transmission among subgroups of a multicast group. The general concept of replicates the received streaming transmission among subgroups of a multicast group is well known in the art as taught by Voit. Voit discloses replicates the received streaming transmission among subgroups of a multicast group (Col. 25 lines 45 -56 and Col 26 lines 1-6 For a multicast service, such as the satellite-originated video broadcast service, the service provider sends one stream through the vertical services domain network 13 to the L3/4 ATM switch 19. The switch 19 will monitor every ATM virtual circuit going to the subscribers, looking for IGNP requests. A subscriber sends an IGNP request to join a selected multicast channel. When the L3/4 ATM switch 19 detects such a request, it identifies the requested channel and the requesting subscriber equipment and forwards a `join` message to the vertical services domain. Subsequently, the switch 19 replicates received packets for the requested broadcast channel, and the switch drops the replicated packets into the cells for each of the virtual circuits of all of the joined subscribers, including the newly added subscriber. When the subscriber later elects to end viewing of the multicast, the subscriber's equipment sends a `leave` message, and the switch 19 stops adding the cells for the multicast to that subscriber's virtual circuit). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Champagne to include replicates

the received streaming transmission among subgroups of a multicast group in order to provide any bandwidth or delay guarantees.

Regarding claim 3

Referring to claim 3 Champagne and Voit discloses all the limitations of claim 3 which is described above. Champagne also discloses the multicast/broadcast server i.e. server 102 communicating with the server i.e. server 103 (Fig.2). Champagne did not discloses replicates the received streaming transmission among the subgroups of a multicast group and forwards each replicated streaming transmission to the streaming node, which adapts each streaming transmission. The general concept of replicates the received streaming transmission among the subgroups of a multicast group and forwards each replicated streaming transmission to the streaming node, which adapts each streaming transmission is well known in the art as taught by Voit. Voit discloses replicates the received streaming transmission among the subgroups of a multicast group and forwards each replicated streaming transmission to the streaming node, which adapts each streaming transmission. (Col. 25 lines 45 -56 and Col 26 lines 1-6 For a multicast service, such as the satellite-originated video broadcast service, the service provider sends one stream through the vertical services domain network 13 to the L3/4 ATM switch 19. The switch 19 will monitor every ATM virtual circuit going to the subscribers, looking for IGNP requests. A subscriber sends an IGNP request to join a selected multicast channel. When the L3/4 ATM switch 19 detects such a request, it identifies the requested channel and the requesting subscriber equipment and forwards a `join` message to the vertical services domain.

Subsequently, the switch 19 replicates received packets for the requested broadcast channel, and the switch drops the replicated packets into the cells for each of the virtual circuits of all of the joined subscribers, including the newly added subscriber. When the subscriber later elects to end viewing of the multicast, the subscriber's equipment sends a `leave` message, and the switch 19 stops adding the cells for the multicast to that subscriber's virtual circuit). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Champagne to include replicates the received streaming transmission among the subgroups of a multicast group and forwards each replicated streaming transmission to the streaming node, which adapts each streaming transmission in order to provide any bandwidth or delay guarantees.

Regarding claim 4

Referring to claim 4 Champagne and Voit discloses all the limitations of claim 4 which is described above. Champagne also discloses wherein a decision unit is provided for deciding how the received streaming flow is to be directed in the intermediate node. (Col. 7 lines 11-22 In one particular approach, the broadcast event is unicast to each receiver using IPSec for encryption on the broadcast channel. Alternatively, the broadcasted event can be transmitted using generic routing encapsulation (GRE). In this approach, the broadcast server 102 communicates the broadcast using multicast to all elements of LAN 104 or network 108 that support multicast, and uses unicast GRE tunnels for communication to clients through elements that do not support multicast. In this approach, for efficiency, the network element that originates the unicast streams could cache the broadcast stream).

Regarding claim 5

Referring to claim 5 Champagne and Voit discloses all the limitations of claim 5 which is described above. Champagne also discloses wherein the streaming nodes have different capabilities and the multicast/broadcast server knows the different capabilities and addresses of the streaming nodes in order to select an appropriate streaming node for performing an appropriate adaptation of the streaming flow. (Col. 7 lines 11-22 In one particular approach, the broadcast event is unicast to each receiver using IPSec for encryption on the broadcast channel. Alternatively, the broadcasted event can be transmitted using generic routing encapsulation (GRE). In this approach, the broadcast server 102 communicates the broadcast using multicast to all elements of LAN 104 or network 108 that support multicast, and uses unicast GRE tunnels for communication to clients through elements that do not support multicast. In this approach, for efficiency, the network element that originates the unicast streams could cache the broadcast stream.) and (Col. 7 lines 58-62 In another approach, network node 202 may maintain a table of network address of known nodes that send broadcasts. Packets received at network node 202 are then examined and a lookup in the table is performed to determine if a broadcast node is sending the packets).

Regarding claim 6

Referring to claim 6 Champagne and Voit discloses all the limitations of claim 6 which is described above. Champagne also discloses wherein in case a hierarchical coding (e.g. encryption) is used the streaming flows are differentiated in sense that a different number of layers is sent to different streaming nodes. (Col. 7 lines 47-57 In block 406, a broadcast event is detected. For example, network node 202 detects that broadcast server 102 has initiated a broadcast. Such detection may be performed using several approaches. For example, if the broadcast server 102 is multicasting the broadcast event, the network node may automatically detect that such an event requires a common encryption scheme for all VPN users. Alternatively, if the broadcast server does not use multicast, the VPN concentrator can detect that a broadcast event is occurring from request information in the protocol layers of event packets above the IP layer.) and (Col. 8 lines 33-41The strength of encryption performed by common channel encryption engine 220D can vary. For example, the VPN concentrator can implement policy-based encryption based on the Layer 3 or Layer 4 attributes of the traffic generated by the broadcast server. As a specific example, network node 202 may examine the type of request received from the VPN client 214B and determine that for a phone conference meeting, 64-bit encryption is used, whereas for a company all-hands meeting, 128-bit encryption is used, etc.)

Regarding claim 7

Referring to claim 7 Champagne and Voit discloses all the limitations of claim 7 which is described above. Champagne also discloses wherein the intermediate node administrates an address identifying the streaming flow arriving from the server. (Col. 7 lines 47-57 In block 406,

a broadcast event is detected. For example, network node 202 detects that broadcast server 102 has initiated a broadcast. Such detection may be performed using several approaches. For example, if the broadcast server 102 is multicasting the broadcast event, the network node may automatically detect that such an event requires a common encryption scheme for all VPN users. Alternatively, if the broadcast server does not use multicast, the VPN concentrator can detect that a broadcast event is occurring from request information in the protocol layers of event packets above the IP layer.) and (Col. 7 lines 58-62 In another approach, network node 202 may maintain a table of network address of known nodes that send broadcasts. Packets received at network node 202 are then examined and a lookup in the table is performed to determine if a broadcast node is sending the packets).

Regarding claim 9

Referring to claim 9 Champagne and Voit discloses all the limitations of claim 9 which is described above. Champagne did not discloses wherein the intermediate node receives a session description message informing about the transmission parameters required for the streaming session and said intermediate node changes the received parameters according to the needs of the subgroups that receive a dedicated replicated stream and sends the changed parameter to the group members by means of the multi-user push signaling message. The general concept of wherein the intermediate node receives a session description message informing about the transmission parameters required for the streaming session and said intermediate node changes the received parameters according to the needs of the subgroups that receive a dedicated

replicated stream and sends the changed parameter to the group members by means of the multi-user push signaling message is well known in the art as taught by Voit. Voit discloses wherein the intermediate node receives a session description message informing about the transmission parameters required for the streaming session and said intermediate node changes the received parameters according to the needs of the subgroups that receive a dedicated replicated stream and sends the changed parameter to the group members by means of the multi-user push signaling message. (Col. 14 lines 59-67 and Col. 15 lines 1-7 Returning to the discussion of the CO 11, the structure and operation of each DSLAM 17 is essentially the same as those of the DSLAM 111 in the embodiment of FIG. 9, except that the control functionality of the DSLAM 17 is somewhat different. The DSLAM 17 controls the ATU-Cs to implement a rate-adaptive ADSL service, to adapt operations so as to maximize data rates for the communications over the individual subscriber lines. Essentially, the ATU-Cs and ATU-Rs signal each other over the lines to synchronize their modes of operation at parameter settings, which achieve optimum data throughput. Also, the DSLAM 17 does not need to monitor or limit the line rates, but instead relies on the rate-adaptive control algorithm to maximize the rates achieved over the ADSL circuits or provide rate-shaping for the ATM virtual circuits. Other network elements limit rates, where necessary. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Champagne to include wherein the intermediate node receives a session description message informing about the transmission parameters required for the streaming session and said intermediate node changes the received parameters according to the needs of the subgroups that receive a dedicated replicated stream and sends the changed parameter to the

group members by means of the multi-user push signaling message in order to provide any bandwidth or delay guarantees.

Regarding claim 10

Referring to claim 10 Champagne and Voit discloses all the limitations of claim 10 which is described above. Champagne did not discloses wherein nodes higher up in the hierarchy are informed that the streaming flow is only to be forwarded to a single node lower in the hierarchy by means of a new message being distribute along the multicast delivery tree. The general concept of nodes higher up in the hierarchy are informed that the streaming flow is only to be forwarded to a single node lower in the hierarchy by means of a new message being distribute along the multicast delivery tree is well known in the art as taught by Voit. Voit discloses nodes higher up in the hierarchy are informed that the streaming flow is only to be forwarded to a single node lower in the hierarchy by means of a new message being distribute along the multicast delivery tree. (Col. 25 lines 45 -56 and Col 26 lines 1-6 For a multicast service, such as the satellite-originated video broadcast service, the service provider sends one stream through the vertical services domain network 13 to the L3/4 ATM switch 19. The switch 19 will monitor every ATM virtual circuit going to the subscribers, looking for IGNP requests. A subscriber sends an IGNP request to join a selected multicast channel. When the L3/4 ATM switch 19 detects such a request, it identifies the requested channel and the requesting subscriber equipment and forwards a `join` message to the vertical services domain. Subsequently, the switch 19 replicates received packets for the requested broadcast channel, and the switch drops

the replicated packets into the cells for each of the virtual circuits of all of the joined subscribers, including the newly added subscriber. When the subscriber later elects to end viewing of the multicast, the subscriber's equipment sends a `leave` message, and the switch 19 stops adding the cells for the multicast to that subscriber's virtual circuit). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Champagne to include nodes higher up in the hierarchy are informed that the streaming flow is only to be forwarded to a single node lower in the hierarchy by means of a new message being distribute along the multicast delivery tree in order to provide any bandwidth or delay guarantees

Regarding claim 11

Referring to claim 11Champagne and Voit discloses all the limitations of claim 11 which is described above. Champagne also discloses wherein the conversion between single-user on-demand and multi-user push signaling implies that certain messages are not propagated. (Col. 1 lines60-67 and Col 2 lines 1-4 Further, communicating broadcast media information using a VPN tunnel may significantly reduce the amount of bandwidth available to the VPN end user for other communications. Such end users may need to perform other kinds of communication such as email, telnet sessions or HTTP browsing using information that is specific to a particular end user. Because broadcast media typically have high bandwidth requirements, communicating such broadcasts on a large number of VPN sessions may exceed the maximum available encryption throughput of the VPN device. As a result, end users may be unable to communicate the user-specific information when a broadcast is in process).

Regarding claim 12

Referring to claim 12 Champagne and Voit discloses all the limitations of claim 12 which is described above. Champagne did not discloses wherein the replication of the streaming flow is based on an access network, in which users are located or/ and on the geographic area and /or on the Quality of Service a subgroup wishes for streaming sessions. The general concept of the replication of the streaming flow is based on an access network is well known in the art as taught by Voit. Voit discloses the replication of the streaming flow is based on an access network, (Col. 25 lines 45 -56 and Col 26 lines 1-6 For a multicast service, such as the satellite-originated video broadcast service, the service provider sends one stream through the vertical services domain network 13 to the L3/4 ATM switch 19. The switch 19 will monitor every ATM virtual circuit going to the subscribers, looking for IGNP requests. A subscriber sends an IGNP request to join a selected multicast channel. When the L3/4 ATM switch 19 detects such a request, it identifies the requested channel and the requesting subscriber equipment and forwards a `join` message to the vertical services domain. Subsequently, the switch 19 replicates received packets for the requested broadcast channel, and the switch drops the replicated packets into the cells for each of the virtual circuits of all of the joined subscribers, including the newly added subscriber. When the subscriber later elects to end viewing of the multicast, the subscriber's equipment sends a `leave` message, and the switch 19 stops adding the cells for the multicast to that subscriber's virtual circuit)., in which users are located or/ and on the geographic area and /or on the Quality of Service a subgroup wishes for streaming sessions (Col. 35 lines 33-51 FIG. 12 provides a

flowchart that summarizes the steps taken by the CPE in forwarding Ethernet frames to the ADN. In step 1202, an Ethernet frame is received at one of the interface ports. The Ethernet frame encapsulates datagrams. Information related to an upper-layer protocol is extracted, in step 1204, from the received frame. Examples of such information include the destination IP address encapsulated within the Ethernet frame. A set of rules (e.g., a routing table) is consulted to determine, in step 1206, what ethertype encapsulation needs to be used based on the extracted upper-layer information. Once the ethertype encapsulation method is identified, the datagram is re-encapsulated, in step 1208, using the identified ethertype encapsulation method. Once encapsulated, the frame, in step 1210, is forwarded upstream over the ADN. In performing the forwarding step (step 1210) the CPE can also consult security access control lists to identify permissible connections and sessions and block Ethernet frames when appropriate. Similarly, the CPE can also perform the forwarding step in a manner to ensure conformance with any QoS parameters associated with the upstream bandwidth.). It would have been obvious of one of ordinary skill in the art at the time of the invention to modify Champagne to include wherein the replication of the streaming flow is based on an access network, in which users are located or/ and on the geographic area and /or on the Quality of Service a subgroup wishes for streaming sessions in order to provide any bandwidth or delay guarantees.

Regarding claim 13

Referring to claim 13 Champagne and Voit discloses all the limitations of claim 3 which is described above. Champagne also discloses wherein the intermediate node requests the actual

characteristics of the area in order to adapt the streaming flow accordingly. (Col. 7 lines 11-22 In one particular approach, the broadcast event is unicast to each receiver using IPSec for encryption on the broadcast channel. Alternatively, the broadcasted event can be transmitted using generic routing encapsulation (GRE). In this approach, the broadcast server 102 communicates the broadcast using multicast to all elements of LAN 104 or network 108 that support multicast, and uses unicast GRE tunnels for communication to clients through elements that do not support multicast. In this approach, for efficiency, the network element that originates the unicast streams could cache the broadcast stream).

Regarding claim 14

Referring to claim 14 Champagne and Voit discloses all the limitations of claim 3 which is described above. Champagne discloses wherein the intermediate node provides additional information to the charging /billing server in order to guarantee an accurate charging and /or multi-user streaming related charging. (Col.26 lines 35-52 Although IP-based, the services from the vertical services domain 13 may follow any other desirable business model. For example, a multicast service provider may contract with the carrier to provide multicast audio (radio-like) and/or video (TV-like) services via the vertical services domain. The multicast service provider, not the subscribers, would pay the carrier. The multicast service provider may offer any or all of the multicast programming to customers on some type pay-per-view basis but would likely offer most of the programming service for free or bundled in as part of some nominal monthly

subscription charge. The multicast service provider instead would charge advertisers in a manner analogous to current broadcast business practices. Advertising distributed with the IP multicasting, however, can be carefully targeted at end-customers having demographic profiles meeting specific criteria specified by individual advertisers, which allows the multicast service provider to charge premium advertising rates.) and (Col.26 lines 16-34 In an enhanced service offering, the broadcast provider could offer a convenient navigation interface from a web server. The server could be on the vertical services network, but preferably is on the wide area Internet 11. With a PPPoE session active, the user can surf to the provider's server and view information about available programming. The user might select a current broadcast program by `clicking` on a URL link in the provider's web-based information. Although provided through the wide area Internet 11, the URL would actually contain the private IP address for the desired broadcast program available from the vertical services network 13. Selection of such a URL therefore would generate a message to the appropriate server on the vertical services network 11 to initiate the above discussed procedure to allow the user to `join` the selected broadcast. A similar methodology might also enable a provider to offer menu, selection and order/billing services from the Internet 11, to provide pay-per-view or video on-demand type services from the vertical services domain network 13). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Champagne to include the intermediate node provides additional information to the charging /billing server in order to guarantee an accurate charging and /or multi-user streaming related charging in order to provide any bandwidth or delay guarantees.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Champagne (US 7,310,730 B1) in view of Voit (US 6,798,751 B1) further in view of Cannon (US 6,014,706).

Regarding claim 8

Referring to claim 8 Champagne and Voit discloses all the limitations of claim 8 which is described above. Champagne did not discloses wherein the intermediate node receives a session description message informing about the transmission parameters required for the streaming session and forwards the received parameters to the group members by means of the multi-user push signaling message. The general concept of wherein the intermediate node receives a session description message informing about the transmission parameters required for the streaming session and forwards the received parameters to the group members by means of the multi-user push signaling message is well known in the art as taught by Cannon. Cannon discloses wherein the intermediate node receives a session description message informing about the transmission parameters required for the streaming session and forwards the received parameters to the group members by means of the multi-user push signaling message In a particularly advantageous embodiment, the fast forward stream is employed for fast forwarding. The steps taken by the server to ascertain the first data packet of the fast forward stream to send when transitioning from the real-time play mode (or other modes except live play) to the fast forward mode are depicted in FIG. 8. In step 802, the server seeks back in the fast forward stream from the video frame whose time corresponds or most closely corresponds to the time parameter sent from the client to

the server in step 502 for the first frame to be sent. Alternatively, the server may seek forward in the fast forward stream from the video frame whose time corresponds or most closely corresponds to the time parameter sent from the client to the server in step 502 for the first frame to be sent. The fast forward stream, like the play stream, are stored in the server as the recording session progresses as video files. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Champagne to include wherein the intermediate node receives a session description message informing about the transmission parameters required for the streaming session and forwards the received parameters to the group members by means of the multi-user push signaling message in order to provide any bandwidth or delay guarantees.

Conclusion

Arguments are deemed moot in view of the new grounds of rejection necessitated by the amendment.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashley D. Turner whose telephone number is 571-270-1603. The examiner can normally be reached on Monday thru Friday 7:30a.m.- 5:00p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ashley D Turner
Examiner
Art Unit 2154

/Nathan J. Flynn/

Supervisory Patent Examiner, Art Unit 2154

/Nathan J. Flynn/

Supervisory Patent Examiner, Art Unit 2143